Activity No. 1: What would you like included in our RAD Undergraduate Research Program?

•Research has lots of meanings. For undergrads it can mean anything especially hands on experiential learning. •The key- data sci undergrad program in the school of arts and sciences has a capstone. Research for undergrads should be more than a glorified capstone. It should enable more for them and the question is how would that get done? •Undergrads are looking for opportunities and Wade noted that we should get these opportunities out to them.
•Noted that there have been suggestions to run applications through the aresty system.- SKB •Asked if anyone approves of the aresty system or if anyone has used it. Majority agreed that the aresty system is a suitable route.
•Aresty system does a great job. Suggested to modify the aresty program to make it exclusive to the program. •Pushing forward the learning curve in sustainability. •Collaborating with multiple PIs and potentially with outside entities.
•What speed and what is the goal? •There should be two speeds for exceptionally good ones and for others who just want to learn. •Mentioned that the competition is high •Who will bring key roles (subject matter) to the program
Funds to support a dozen undergrads which includes stipends and housing. Expectation that they will be good enough to be invite some to come back and do research. Sourcing stars who can identify key roles and bring subject matter knowledge to the project.
What types of AI/machine learning are undergrads currently using?
There is the data sci undergrad degree jointly run by SAS, SOE, SKY and maybe one other school. Students are exposed to basic programming and analyzing data. The focus is not so much on the AI machine learning. For undergrads it would be included in their normal curriculum or maybe an application or a special topics class. Most of the students in math, computer science, statistics, engineering disciplines already have python and other basic programming skills. This would be introducing them to research which would be new for them. Knowing how to code is different than knowing how to think critically, how to formulate a problem. Would be taking it to another level which requires mentorship.
Speaking from experience, needs to create infrastructure to facilitate the transition from coursework to research. At times, labs may not have the expertise or are unable to handle the scope of learning the students are looking for as students are eager to learn a wide range of topics. Could create pipelines, example: labs would benefit having a computational person coming in to assist. Could take it further in machine learning. If there were courses designed to facilitate the transition from coursework to research in a domain specific way. Example: teaching a computational chemistry course where foundations is taught, and computations chemists can act as facilitators using their techniques where some labs may fall short.
The most exciting research for undergrads was when they were working as a team. One possibility would be to have a pool of mentors to come up with collaborative projects where they can work together over the summer.

Activity No. 1: What would you like included in our RAD Undergraduate Research Program?

•Beneficial to add entrepreneurship component to the program. For AI/Data Science, it is relatively easier to be an entrepreneur given the resources needed. •There is software used to tell if students use chatgbt to cheat which was developed by a Princeton undergrad who is now very successful.
•Feels 12 undergrads isn't plenty. Noted that getting more funding would be possible. Suggested a pipeline, facilities and infrastructure for sharing. •SKB- that can come from how this is put together, using the aresty program to manage the input, having multiple PIs.
Key word is program. Supporting services for the students, what makes them want to do this? Perhaps mentorship, training for entrepreneurship. A program amongst PIs and faculty to help the institute go after the funding needed to sustain. Go after REUS, grants, etc. Wants the RAD Collaboratory to offer new types of proposals and opportunities. What are the students being offered? Training for entrepreneurship. Heping the PI go after the funding. Wants the RAD Collaboratory to implement new funding and new proposals.
More opportunities and mentoring support and information about events and clear opportunities mentioned
ML sandbox
Adding prerequisites for participation in various activities. Eg. certificates from LinkedIn learning
Exposure to Supercomputers like NERSC Perlmutter, NCSA Delta, TACC etc
Leveraging Aresty infrastructure is a fantastic idea. What if faculty paid the summer stipend (allowing us to take more students) and RAD provided housing stipends to nonlocal students? Then the RAD money would be used to create equity between local/nonlocal students, while we get more students total.
1. A platform that's easy to navigate and provides information about everything that's going on, what the expectations are, etc. A way to get in touch with the people that are in charge. 2. It should be clear if the position is paid, what the time expectations are, etc. 3. The platform could make it easier to "get through" to the PI 4. More talks and mingling events b/w PIs and undergraduates. What is research?
Training in SQL and noSQL databases, since they are often lacking
Cross disciplinary collaborations outside of existing collaborations should be a mandatory part. 2 the outcome must be a joint grant application.

Activity No. 2: What would you like included in our March 5th Data Science Event?

What infrastructure would be needed to use the data, make it more useful and more accessible?
Suggested (in addition to funding) having students make the data sets available (downloading, getting a check by staff before it goes out). Some of the larger data sets will require access to new technology. All of the faculty has separate goals/projects.
PDB ran a 3-credit course some years ago on how to build a FAIR FACT principles compliant data resource. Would there be interest in having this course ran again in the fall? Applying the same discipline to Rutgers would help being a better provider in research data. The audience supports this idea.
How many submit to Zenoto when you publish a paper? Zenoto is not good without proper infrastructure and proper data standards. The PDB has millions of users downloading a substantial amount of data. Google deep mind uses content of the PDB data for the alpha fold software. This presents an opportunity to upgrade Rutgers' status by being a provider of critical research data
There is a layer of HIPPA compliance, has to have infrastructure to help regulate HIPPA policies. This may not be available to AI as of yet.
Acknowledges statement, thinks they should not shy away because of HIPPA
Clinical trials researcher versed in creating data sets for data across the world. Would be great to have a resource to help with issues in making data fair and available. Mentioned funding. A real opportunity to take the data in various disciplines and making Rutgers a source for high quality data. Providing a broad-based training on automation data.
Rutgers has several archival collections that are varied but not connected. Some of them are using AI to create visual data. Being able to combine them as a data science output would create a bigger presence and help elevate Rutgers.
Including the individuals responsible for creating and maintaining the infrastructure. Would be good to get in touch with them to see how it works and collaborate with everyone involved.

Activity No. 2: What would you like included in our March 5th Data Science Event?

Catalog and find opportunities and discover what everyone is working on. There should be opportunities to explore and identify resources they have and don't have. Find out what is limited from a computing and data storage side. Get with OARC and find out how to connect, find about the networking, etc.- and take control of that. List what is needed and quantify it, then begin to ask. Look for data sets and storage opportunities.
Will need efforts and resources to make the data research ready. Some data will not need to be maintained is you are using other depositories.
Wonders if there are ethical considerations that need to be involved. Suggests using credibility of institutions of higher learning as a justification for expansion and use of large resources. How to explore legal and ethical components with google and meta.
Short answer is yes, there is a team that has been exploring these issues. Concerns are larger than the impact of AI.
RFI for campus-wide signature areas already have significant AI/ML research and funding, e.g., AI Manufacturing.
Availability of resources, open projects / collaboration opportunities
Some employers and what they think of AI tools and their productivity using them
All of our NSF and other federal grants require data plans. Can Rutgers help standardize and maximize the effectiveness of these requirements.
Workshop demonstrating a case study in making a dataset FAIR and FACT
Data quality should be the number one topic.
Asking participants to report their (current, curated and well maintained) internal databases.
Mitigating the environmental footprint of Big Data infrastructure. 2. What are the ethical dangers and their consequences of enabling Big Data infrastrucure on the anticipated scale and with commercial partners whose goal is not research or education, but rather control of people and natural resources?

Activity No. 3: What would you like included in our April 8th AI/ML Event?

With AI/ML focused sustainability side- there is mass climate footprint. Water and carbon use (through energy). As they continue to grow, figure out a way to integrate AI and minimize usage/costs by pairing them with more energy focused resources. Would be nice if Rutgers could be a model, would elevate the program and Rutgers.
People at Rutgers are developing algorithms. There are others who have subject matter expertise, but they do not have the background in AI and machine learning to take it to the next level. How do you merge the two? SKB and Dimitris are working on AI applications in the context of biomedicine. Needs something to put together to merge both. This will create a competitive advantage. Large multi-PI awards bring prestige and will be strong contributors to the long-term success
Is a computational biologist and works with algorithms. Would like to collaborate with computer scientists, etc. within Rutgers. Sees these events a venue to collaborate. PIs need opportunities to get to know each other.
There are opportunities to make a difference. Would have to enhance communication
Perhaps RAD can have a profile/database for visitors to search and find resources/infrastructure to facilitate these collaborations.
There is such data managed by the office of Research. Perhaps RAD can take data that has already been curated, redistribute and make it more useful.
Putting together a quick way to meet people.
AI is a broad topic and covers lot of things. There are different types of needs when people use AI as a resource. Helpful to identify the type and separate it into 3 categories: 1 is AI for for scientists and undergrads/masters students- processing and collecting 2 for science/alpha fold at the PhD level 3 AI for discovery, serving as a search SKB said perhaps having smaller rooms with different themes where individuals can migrate as they see fit
How to get AI researchers together with groups to create new AI. Noted there is technical AI help.
Noted that RAD is recruiting for a Research Programmer to handle that. Wants to make an investment and make a return on it. Getting a set of research programmers and supporting these teams. Has started assembling a NSF grant to support 4 more research programs. Will have an impact by combining the subject matter experts with data science experts.

Activity No. 3: What would you like included in our April 8th AI/ML Event?

I am pathologist mainly clincial pathlogy services every single day which is pretty busy. But also I have something specific in my mind to employ AI or ML to do image processing to bridge pathlogy and radiology/ imaging science. But of course I have no time or no background to learn AI or code(tried myself though to install Physon or Sphyder. But failed…) And also no time to get to know who can potentially help me with in Rutgers community. I wonder if there is any web based platform to propose ideas including mine which would be open but shared only within Rutgers community. And researcher in AI can see and if interested in the idea or proposal, then this plat form will connect with them.
Hands on research
Comparison of state-of-the-art AI tools so far and open-source/private capacities
Randomized pairings of people at comparable “levels” (postdoc, professor, etc)
What are the fundamental challenges in AI/ML that collaboration could help advance. What's Rutgers' unique value proposition as an AI-first institution.
5 minutes talk from participants informing which ML methods they use and which types of data they have.
Mitigating the environmental footprint of Big Data infrastructure. 2. What are the ethical dangers and their consequences of enabling Big Data infrastrucure on the anticipated scale and with commercial partners whose goal is not research or education, but rather control of people and natural resources?

Activity No. 4: Craft RAD Vision Statement.

Empower transformative data driven solutions to address challenges in research and education
Match needs, skills and resources.
Bridging the gap between data and data science
Connecting people data and ideas to lead
Spread AI
Empower Rutgers' strength—diverse, decentralized research—through AI/DS discoveries, infrastructure, and collaboration.
Collaborations and resources for intelligent solutions.
Bringing Good Ideas Together for Good AI
Create computational intelligence units for the Rutgers science and engineering community.
Where data meets innovation; Rediscover data: deliver insights, drive innovation, shape future
Deep Learning Deep connections

Activity No. 5: Craft RAD Mission Statement.

•Providing a platform to collaborate access, resources and solutions by encouraging individuals •Building a diverse and sustainable knowledgebase •AI for good, bringing good ideas together for good AI •Empower Rutgers strength, diversify centralized research through AI data science discoveries and infrastructure
To drive innovative AI research and solutions to make smarter data decisions (unable to scribe the entire statement)
Promoting data usage and storage (unable to scribe the entire statement)
Networking to promote collaboration
New Jersey's AI hub to powerhouse industry, sustainability and health
Creating a platform for Rutgers researchers to facilitate the transition to ML and AI in their research. Enable training, collaborations, and innovation on AI/Data Science across Rutgers.
Democratize data and analysis by making Rutgers a data mecca and disseminating tools to explorers.
Provide a platform for Rutgers community to collaborate, access resources, and build intelligent data driven solutions by bridging on the strengths of diverse individuals.
Enabling compatibility & interaction of a highly diverse research community
Making Rutgers an AI-first institution for advancing science and engineering.
•Create sustainable infrastructure for data-driven research •Make Rutgers the leader in AI/ML education •Provide a platform for innovative collaborations
Accelerating research at Rutgers by promoting a diverse community to leverage AI.
Inspire Rutgers with AI’s might, empower changes through data’s light.

Optional: Prove additional feedback to the Interim Director and RAD Steering Committee.

•RAD online community. Wiki, faqs, resources, project opportunities and marketplace
•Make a dedicated webpage/center-like website to accommodate all the people part of this initiative so that peers can track/see what others are doing through some news/events stream
•The data and computation infrastructure at Rutgers is not responsive to what the "boots on the ground" need and the reporting/funding lines are misaligned to fix it.
•I wish the current ideas for the events were more clearly articulated beforehand before giving potentially redundant feedback
•In the spirit of Jacob Bronowski's book, The Ascent of Man, the ascent of AI is yet another crushing boot on the throats of other living organisms that we share the planet with. The next step in the total domination of all living things on Earth -David Attenborough